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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,259	10/01/2001	Richard C. Rose	2000-0572	5143

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EXAMINER	
JACKSON, JAKIEDA R	

ART UNIT	PAPER NUMBER
2655	

DATE MAILED: 09/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/966,259	ROSE ET AL.	
	Examiner	Art Unit	
	Jakieda R Jackson	2655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-32 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-32 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 01 October 2001 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claims 1, 5, 7, 8, 10, 12-13, 19, 21, 26-27 and 31-32** are rejected under 35 U.S.C. 102(e) as being anticipated by Thrasher et al (U.S. Publication No. 2002/0052742), hereinafter references as Thrasher.

Regarding **claims 1, 13 and 21**, Thrasher discloses an automatic speech recognition system, controller and method, hereinafter referenced as an "ASR system", comprising:

a memory (storage devices) that stores data related a communication device (hand-held devices/communication network; column 2, paragraph 0019);

a controller coupled with the memory (memory controller) that determines the data of the communications device (column 2, paragraph 0019 and 0020), and then compensates at least one speech recognition model to reflect the data (language model; figure 2, element 110); and

a speech recognizer (recognizer; column 3, paragraph 0035) that recognizes speech utterances by using the at least one compensated speech recognition model (recognized speech; column 3, paragraph 0038).

Regarding **claim 5**, Thrasher discloses an ASR system according wherein a personal computer (figure 1, element 20) is used provide the data of the communications device (column 2, paragraph0023 and 0024).

Regarding **claims 7 and 26**, Thrasher discloses an ASR system wherein the data of the communications device is provided through a satellite communications system (column 2, paragraph 0022).

Regarding **claims 8 and 27**, Thrasher discloses an ASR system wherein the speech recognizer is a network server using a hidden Markov mode (column 3, paragraph 0030).

Regarding **claims 10 and 31**, Thrasher discloses an ASR system wherein the network server updates (update) the at least one speech recognition model (column 1, paragraph 0009).

Regarding **claims 12 and 32**, Thrasher discloses an ASR system wherein the communications device can be configured by an end user to select a specific speech

recognition network (selected portions; column 3, paragraph 0037 with column 4, paragraph 0039-0040).

Regarding **claim 19**, Thrasher discloses an ASR system wherein the controller communicates with a memory (memory controller) that stores various acoustic environmental models (environment) and various features of a specific type of mobile device (hand-held device; column 2, paragraph 0019-0020 and column 3, paragraph 0029).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. **Claims 2-4, 6, 9, 11, 18, 20, 22-24, 25, 28** are rejected under 35 U.S.C. 103(a) as being unpatentable over Thrasher in view of Pan et al. (U.S. Patent No. 6,304,844), hereafter referenced as Pan.

Regarding **claims 2 and 22**, Thrasher discloses an ASR system, but lacks wherein the transducer data includes a distortion value related to a transducer of a mobile communications device.

Pan discloses an ASR method wherein the transducer data includes a distortion value (distortion scores) related to a transducer of a mobile communications device (column 6, lines 25-57), to obtain the greatest similarity of a word.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Thrasher's system such that the transducer data includes a distortion value related to a transducer of a mobile communications device as in Pan, to obtain the difference between two measurements of a signal, which gives the greatest similarity of a word (column 6, lines 57-59 with lines 37-47).

Regarding **claims 3 and 23**, Thrasher discloses an ASR system, but lacks wherein the acoustic environmental data includes a background noise value that corresponds to an operating environment of a mobile communications device.

Pan discloses an ASR system wherein the acoustic environmental data includes a background noise (background noise) value that corresponds to an operating environment of a mobile communications device (cell phones; column 10, lines 13-17), to collect models from different communication devices.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Thrasher's system such that the acoustic environmental data includes a background noise value that corresponds to an operating environment of a mobile communications device as in Pan, to have a variety of mobile communication devices which can be included to detect noise in different environments (column 10, lines 13-17 with column 2, lines 60-63).

Regarding **claim 4**, Thrasher discloses an ASR system, but lacks wherein the vocal information includes a distortion value related to an end user associated with a mobile communications device.

Pan discloses an ASR system wherein the vocal information includes a distortion value (figure 4, element 402 with figures 6-8 and column 6, lines 51-57) related to an end user associated with a mobile communications device (column 1, lines 7-9), to obtain the greatest similarity of a word.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Thrasher's system such that the vocal

information includes a distortion value related to an end user associated with a mobile communications device as in Pan, to obtain the difference between two measurements of a signal, for the greatest similarity of a word (column 6, lines 57-59 with lines 37-47).

Regarding **claims 6 and 25**, Thrasher discloses an ASR system, but lacks wherein a personal digital assistant is used to provide the data of the at least one communications device, transducer, vocal information and acoustic environmental data.

Pan discloses an ASR system wherein a personal digital assistant is used to provide the data of the at least one communications device (column 12, lines 48-51), to perform specific tasks.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Thrasher's system such that wherein a personal digital assistant is used to provide the data of the at least one communications device, transducer, vocal information and acoustic environmental data as in Pan, to have a variety of mobile communication devices which can be included to detect noise in different environments (column 10, lines 13-17 with column 2, lines 60-63).

Regarding **claims 9 and 28**, Thrasher discloses an ASR system, but lacks wherein the controller is a network server that includes a pronunciation circuit, an environment-transducer-speaker circuit and a feature space circuit.

Pan discloses an ASR system wherein the controller is a network server that includes a pronunciation circuit (pronunciation database; figure 1, element 103), an environment-transducer-speaker circuit (figure 1, element 101 with column 10, lines

12-17) and a feature space circuit (feature extraction; column 3, lines 60-65), to achieve the optimum accuracy of the recognized speech.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Thrasher's system wherein the controller is a network server that includes a pronunciation circuit, an environment-transducer-speaker circuit and a feature space circuit as in Pan, to rapidly process a greater variety of words, so that voice information transfer is feasible in any communication device (column 2, lines 54-63).

Regarding **claim 11**, Thrasher discloses an ASR system, but lacks wherein the memory further stores personal account and a probability value that represents a probability of the end user being in a particular background environment.

Pan discloses an ASR system wherein the memory further stores personal account information that includes administrative information relating to an end user (individual user's pronunciation; column 4, lines 1-4), and a probability value that represents a probability of the end user being in a particular background environment (beginning and end points; column 10, lines 9-27), to achieve optimum accuracy of the recognized speech.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Thrasher's system such the memory stores personal account information and a probability value that represents a probability of the end user being in a particular background environment as in Pan, to have a variety of

mobile communication devices which can be included to detect noise in different environments (column 10, lines 13-17 with column 2, lines 60-63).

Regarding **claim 18**, Thrasher discloses an ASR system, but lacks wherein the vocal information represents a variability that exists in vocal tract shapes among speakers of a group.

Pan discloses an ASR system wherein the vocal information represents a variability that exists in vocal tract shapes among speakers of a group (vocal tract characteristics; column 5, lines 5-8), to allow personalized pronunciations.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Thrasher's system the vocal information represents a variability that exists in vocal tract shapes among speakers of a group as in Pan, thereby allowing personalized pronunciations to be achieves with minimal processing and storage (column 5, lines 5-8).

Regarding **claim 20**, Thrasher discloses an ASR system, but lacks wherein a third section stores personal account information for each end user.

Pan discloses an ASR system wherein a third section stores personal account information for each end user (personalized pronunciation with storage; column 5, lines 5-8), to allow personalized pronunciations.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Thrasher's system wherein a third section stores personal account information for each end user as in Pan, thereby allowing

personalized pronunciations to be achieves with minimal processing and storage (column 5, lines 5-8).

Regarding **claim 24**, Thrasher discloses an ASR system, but lacks wherein the data of the at least one of a communications device, transducer, vocal information and acoustic environmental data is received from a cellular telephone.

Pan discloses an ASR system wherein the data of the communications device is received from a cellular telephone (cell phones; column 10, line 14 with column 2, line 61), to collect models from different communication devices.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Thrasher's system an wherein the data of the at least one of a communications device, transducer, vocal information and acoustic environmental data is received from a cellular telephone as in Pan, to have a variety of mobile communication devices which can be included to detect noise in different environments (column 10, lines 13-17 with column 2, lines 60-63).

6. **Claim 14** is rejected under 35 U.S.C. 103(a) as being unpatentable over Thrasher in view of Eagleson et al. (U.S. Patent No. 6,720,888), hereinafter references as Eagleson.

Regarding **claim 14**, Thrasher discloses an ASR system, but lacks wherein the controller identifies a mobile device by a radio frequency identification tag.

Eagleson discloses the controller identifies a mobile device by a radio frequency identification tag (column 1, lines 19-21 with column 14, lines 38-41), to track mobile devices.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Thrasher's system wherein the controller identifies a mobile device by a radio frequency identification tag as in Eagleson, to accurately determine the location of mobile devices (column 29, lines 1-4)

7. **Claims 15 and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Thrasher in view Buhrke et al. (U.S. Patent No. 5,806,029), hereinafter referenced as Buhrke.

Regarding **claim 15**, Thrasher discloses an ASR system, but lacks wherein the acoustic environmental data is determined using at least one microphone in an end user's environment.

Buhrke discloses an ASR system wherein the acoustic environmental data (acoustic environment) is determined using at least one microphone in an end user's environment (column 10, lines 23-35), to exacerbate acoustic variation and acoustic mismatch.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Thrasher's system wherein the acoustic environmental data is determined using at least one microphone in an end user's environment as in Buhrke, to collect models through different channels and commutation media (column 10, lines 23-26).

Regarding **claim 17**, Thrasher discloses an ASR system, but lacks wherein the transducer data is a distortion value based on a difference between an actual transducer in the mobile device and a response characteristic of a transducer used to train the speech recognition model.

Buhrke discloses an ASR system wherein the transducer data is a distortion value (distortion feature; column 5, lines 48-57) based on a difference between an

actual transducer in the mobile device (modeled training data) and a response characteristic of a transducer (testing signals; column 7, lines 3-5) used to train the speech recognition model (training speech recognition models; column 10, lines 23-35), to prevent degradation in speech recognition capabilities.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Thrasher's system wherein the transducer data is a distortion value based on a difference between an actual transducer in the mobile device and a response characteristic of a transducer used to train the speech recognition model as in Buhrke, to prevent degradation in speech recognition capabilities considering variation in telephone headsets, ambient noises and channel distortions (column 5, lines 48-58).

8. **Claim 16** is rejected under 35 U.S.C. 103(a) as being unpatentable over Thrasher in view Byers (U.S. Patent No. 6,219,645).

Regarding **claim 16**, Thrasher discloses an ASR system, but lacks wherein the acoustic environmental data is determined using a plurality of microphones that are selectively initiated as an end user walks in between the plurality of microphones.

Byers discloses an ASR system wherein the acoustic environmental data is determined using a plurality of microphones (figure 1, elements 70, 5, 80, 85) that are selectively initiated as an end user walks in between the plurality of microphones (targets for users commands; column 10, lines 49-54), to pick up signals in different directions.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Thrasher's invention wherein the acoustic environmental data is determined using a plurality of microphones that are selectively initiated as an end user walks in between the plurality of microphones as in Byers, to improve the signal to noise ratio by choosing which microphone(s) are providing the highest quality audio.

9. **Claims 29-30** are rejected under 35 U.S.C. 103(a) as being unpatentable over Thrasher in view of Pan et al. as applied to claim s 23 and 22 above, and further in view of Buhrke.

Regarding **claim 29**, Thrasher in view of Pan, as applied to claim 23 above, discloses an ASR system, but lacks wherein the acoustic environmental data is determined using at least one microphone in an end user's environment.

Buhrke discloses an ASR system wherein the acoustic environmental data (acoustic environment) is determined using at least one microphone in an end user's environment (column 10, lines 23-35), to exacerbate acoustic variation and acoustic mismatch.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Thrasher's system wherein the acoustic environmental data is determined using at least one microphone in an end user's

environment as in Buhrke, to collect models through different channels and commutation media (column 10, lines 23-26).

Regarding **claim 30**, Thrasher in view of Pan, as applied to claim 22 above, discloses an ASR system, but lacks wherein the transducer data is a distortion value based on a difference between an actual transducer in the mobile device and a response characteristic of a transducer used to train the speech recognition model.

Buhrke discloses an ASR system wherein the transducer data is a distortion value (distortion feature; column 5, lines 48-57) based on a difference between an actual transducer in the mobile device (modeled training data) and a response characteristic of a transducer (testing signals; column 7, lines 3-5) used to train the speech recognition model (training speech recognition models; column 10, lines 23-35), to prevent degradation in speech recognition capabilities.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Thrasher's system wherein the transducer data is a distortion value based on a difference between an actual transducer in the mobile device and a response characteristic of a transducer used to train the speech recognition model as in Buhrke, to prevent degradation in speech recognition capabilities considering variation in telephone headsets, ambient noises and channel distortions (column 5, lines 48-58).

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Gong (U.S. Patent No. 6,418,411) discloses a method and system for adaptive speech recognition in a noisy environment.
- Higgins et al. (U.S. Patent No. 6,266,633) discloses noise suppression and channel equalization preprocessor for speech and speaker recognizers.
- Rigsby et al. (U.S. Patent No. 6,556,971) discloses a computer-implemented speech recognition system training.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jakieda R Jackson whose telephone number is 703.305.5593. The examiner can normally be reached on Monday through Friday from 7:30 a.m. to 5:00p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on 703. 305.4827. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JRJ
August 30, 2004

W. R. YOUNG
PRIMARY EXAMINER